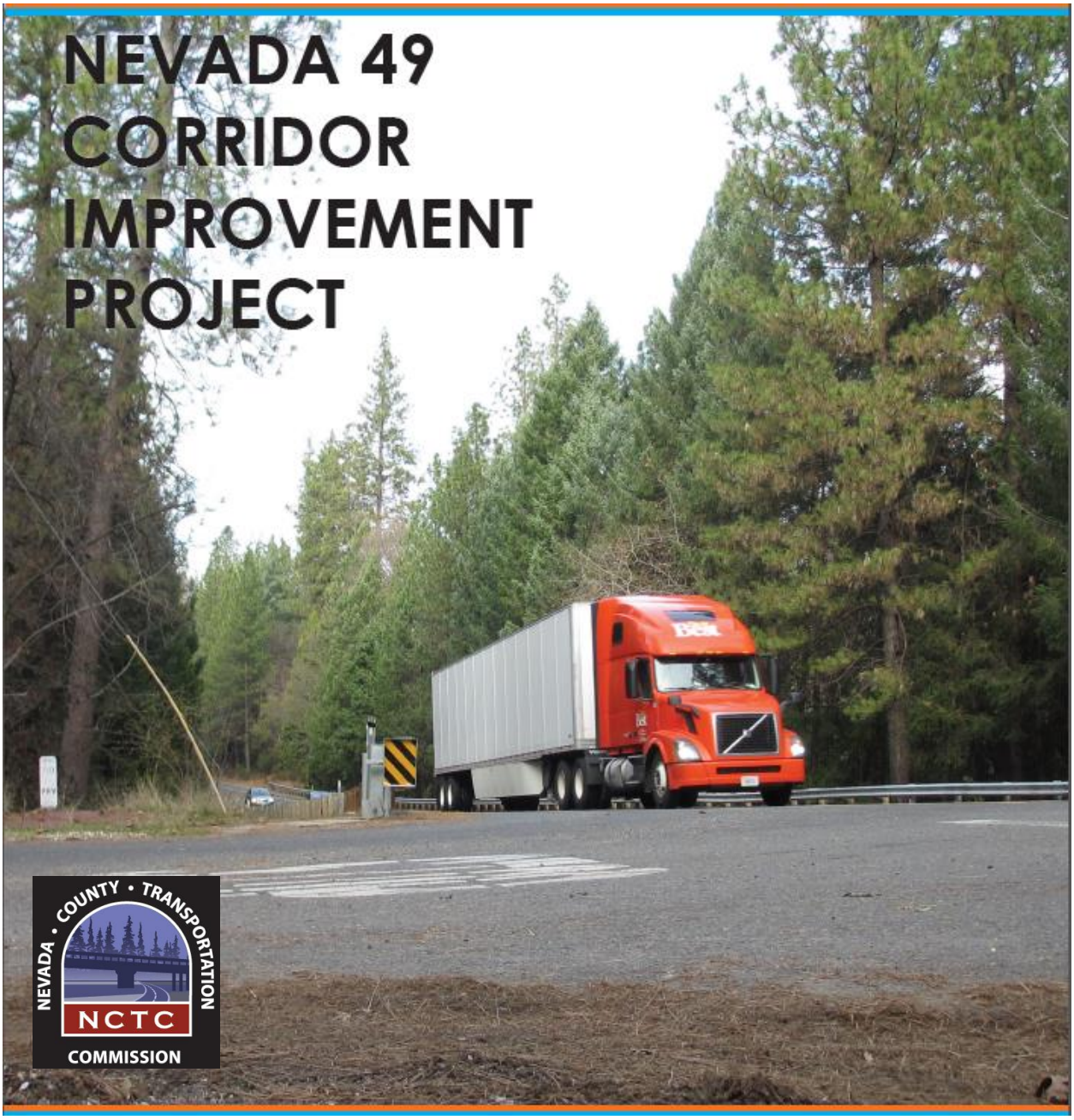
Nevada County Transportation Commission
2020 Regional Transportation Improvement Program



The Nevada County Transportation Commission hereby submits the following projects and recommendations to the California Transportation Commission as NCTC's 2020 Regional Transportation Improvement Program:

1. Add $900,000 for PA/ED in FY 2020/21 for the SR 49 Widening – La Barr Meadows Road to McKnight Way project.

   This project proposes to widen SR 49 to a four-lane highway with a continuous median barrier and 8-foot shoulders. In previous STIPs, $6 million of Nevada County RIP funds were programmed for the project as follows: $3 million for Project Approval and Environmental Documentation (PA/ED), and $3 million for Plans, Specifications, & Estimates (PS&E). PA/ED is scheduled to be complete in the spring of 2020. However, due to new environmental requirements under the California Environmental Quality Act (CEQA), Caltrans has estimated that an additional $900,000 is necessary for the remaining work to evaluate project alternatives and complete the analysis for the air quality portion of the environmental document.

2. $299,000 for STIP Planning, Programming, and Monitoring Activities - Apportioned as follows:

FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	Total
$60,000	$60,000	$60,000	$59,000	$60,000	$299,000

2020 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM (2020 RTIP)

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A. Overview and Schedule

Section 1. Executive Summary

Insert executive summary narrative in the text field below.

The Nevada County Transportation Commission hereby submits the following projects and recommendations to the California Transportation Commission as NCTC's 2020 Regional Transportation Improvement Program:

1. Add $900,000 for PA/ED in FY 2020/21 for the SR 49 Widening – La Barr Meadows Road to McKnight Way project.
2. $299,000 for STIP Planning, Programming, and Monitoring Activities.

Section 2. General Information

Insert contact information in the text fields below.

- **Regional Agency Name**
  Nevada County Transportation Commission

- **Agency website links for Regional Transportation Improvement Program (RTIP) and Regional Transportation Plan (RTP).**

  Regional Agency Website Link: http://www.nctc.ca.gov/

  RTIP document link: http://www.nctc.ca.gov/

  RTP link: http://www.nctc.ca.gov/documents/RTP/Final%20Nevada%20Co%20RTP%201_17_18.pdf

- **Regional Agency Executive Director/Chief Executive Officer Contact Information**

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Telephone	530-265-3202

- **RTIP Manager Staff Contact Information**

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Telephone	530-265-3202	Fax	530-265-3260

- **California Transportation Commission (CTC) Staff Contact Information**

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Section 3. Background of Regional Transportation Improvement Program (RTIP)

A. What is the Regional Transportation Improvement Program?

The Regional Transportation Improvement Program (RTIP) is a program of highway, local road, transit and active transportation projects that a region plans to fund with State and Federal revenue programmed by the California Transportation Commission in the State Transportation Improvement Program (STIP). The RTIP is developed biennially by the regions and is due to the Commission by December 15 of every odd numbered year. The program of projects in the RTIP is a subset of projects in the Regional Transportation Plan (RTP), a federally mandated master transportation plan which guides a region's transportation investments over a 20 to 25 year period. The RTP is based on all reasonably anticipated funding, including federal, state and local sources. Updated every 4 to 5 years, the RTP is developed through an extensive public participation process in the region and reflects the unique mobility, sustainability, and air quality needs of each region.

B. Regional Agency's Historical and Current Approach to developing the RTIP

The RTIP historically is developed based on the regional priorities identified in the Nevada County Regional Transportation Plan (RTP). Development of the RTP includes a significant public outreach process to engage the public and local and state officials in order to gain consensus on the top regional priorities. NCTC staff develop recommendations for projects to funded in the RTIP based on the RTP priorities and the Nevada County Transportation Commission after consideration of public input received at the public hearing determine what projects and funding amounts are then adopted into the RTIP.

Completion of the Nevada 49 Corridor Improvement Project (CIP) this project is the top regional priority of the NCTC and there is strong local support for improvements that will improve safety and operations on SR 49. There is also a strong local desire to have the highway improved to four lanes to facilitate and handle the traffic capacity associated with a mass-evacuation in the event of a major wildland fire.

This project was programmed for PA/Ed in the 2014 STIP. Caltrans District 3 is the implementing agency and PA/ED is scheduled for completion in 2020.

Section 4. Completion of Prior RTIP Projects (Required per Section 68)

Provide narrative on projects completed between the adoption of the RTIP and the adoption of the previous RTIP in text field below as is required per Section 68 of the STIP Guidelines.

No other projects were programmed or completed after the adoption of the 2018 RTIP.

Insert project information for completed projects in table below. N/A

Project Name and Location	Description	Summary of Improvements/Benefits

Section 5. RTIP Outreach and Participation

Insert dates below – Regional agencies can add rows to the schedule – Rows included below should remain for consistency.

A. RTIP Development and Approval Schedule

Action	Date
CTC adopts Fund Estimate and Guidelines	August 14, 2019
Caltrans identifies State Highway Needs	September 15, 2019
Caltrans submits draft ITIP	October 1, 2019
CTC ITIP Hearing, North	October 8, 2019
CTC ITIP Hearing, South	October 15, 2019
Regional Agency adopts 2020 RTIP	December 18, 2019
Regions submit RTIP to CTC (postmark by)	December 15, 2019
Caltrans submits ITIP to CTC	December 15, 2019
CTC STIP Hearing, South	January 30, 2020
CTC STIP Hearing, North	February 6, 2020
CTC publishes staff recommendations	February 28, 2020
CTC Adopts 2020 STIP	March 25-26, 2020

B. Public Participation/Project Selection Process

Provide narrative on your agency's public participation process and project selection process for your RTIP in the text field below.

Public involvement is a major component of the transportation planning process. Every person in Nevada County is affected by transportation and, as such, is an important component of the transportation planning process. The NCTC makes a concerted effort to solicit public input from all Nevada County residents, including underrepresented groups, to transportation planning within Nevada County. Specific examples include:

- Public hearings were held and noticed in the main newspapers in western and eastern Nevada County prior to adoption of both the RTP and RTIP.

- The NCTC produces and maintains a website, www.nctc.ca.gov, to keep the public informed of transportation planning efforts in Nevada County. Planning documents, including the RTIP and RTP, are posted to this site.

- In June 2006, as a result of input from the SR 49 Stakeholder Committee the Caltrans Office of Traffic Operations designated SR 49 from Dry Creek Road to near McKnight Way in Grass Valley as a Safety Corridor and a daylight/headlight section. A Safety Corridor is a segment of highway with a history of high fatal collisions (McKnight to Combie) or a segment of highway with potential for fatal and severe collisions (Combie to Dry Creek) that is identified and focused on by state and local officials with increased enforcement, public awareness measures, short-term improvements and long term improvements in order to reduce and prevent fatal and severe collisions.

- In 2009, Caltrans in coordination with the Nevada County Transportation Commission and SR 49 Stakeholder Committee developed the SR 49 Corridor System Management Plan (CSMP). The development of the 2009 SR 49 CSMP was a unique "first generation CSMP" because two large major capital projects located in the corridor were redefined into eight smaller projects based on a phasing plan developed by Caltrans and NCTC.

- On March 22, 2017, in response to five fatalities in the SR 49 corridor that occurred between mid-December 2016 and mid-February 2017, the Citizens for Highway 49 Safety organized another community meeting to re-address safety concerns with state and local officials. In addition to the efforts of the Citizens for Highway 49 Safety, Jolee Allen a 12 year old 7th grader at Nevada City School of the Arts created the Fix49.org campaign, that included studying statistics, interviewing experts, creating a website to raise awareness, gather input, and provide public information for her Science, Technology, Engineering, Art, and Math project (STEAM). Through her efforts she has collected approximately 2,900 signed petitions requesting improvements in the SR 49 corridor.

C. Consultation with Caltrans District (Required per Section 17)

Insert the Caltrans District Number in the text field below.
Caltrans District: 3

Provide narrative on consultation with Caltrans District staff in the text field below as is required per Section 17 of the STIP Guidelines.

Caltrans District 3 is the implementing agency and conducts Project Development Team (PDT) meetings on a regular basis. Through the PDT meeting process it was determined that additional funds would be needed to complete PA/ED.

B. 2020 STIP Regional Funding Request

Section 6. 2020 STIP Regional Share and Request for Programming

A. 2020 Regional Fund Share Per 2020 STIP Fund Estimate

Insert your agency's target share per the STIP Fund Estimate in the text field below.

Total target through 2024-25 $3,239,000

B. Summary of Requested Programming – Insert information in table below

Project Name and Location	Project Description	Requested RIP Amount
SR 49 Widening, La Bar Meadows Road to McKnight Way, 4E170	Complete PA/ED to Widen this segment of SR 49 to a four-lane highway with a continuous median/barrier and 8-foot shoulders.	$900,000
PPM	PPM	$299,000

Section 7. Overview of Other Funding Included With Delivery of Regional Improvement Program (RIP) Projects

Provide narrative on other funding included with the delivery of projects included in your RTIP.

No other funding included in this project component.

Proposed 2020 RTIP	Total RTIP	Other Funding					Total Project Cost
		ITIP	RSTP/ CMAQ	Fund Source 1	Fund Source 2	Fund Source 3	
							-
							-
							-
							-
							-
							-
							-
							-
							-
							-
Totals	-	-	-	-	-	-	-

Notes: Click here to enter text.

Section 8. Interregional Transportation Improvement Program (ITIP) Funding

The purpose of the Interregional Transportation Improvement Program (ITIP) is to improve interregional mobility for people and goods in the State of California. As an interregional program, the ITIP is focused on increasing the throughput for highway and rail corridors of strategic importance outside the urbanized areas of the state. A sound transportation network between and connecting urbanized areas ports and borders is vital to the state's economic vitality. The ITIP is prepared in accordance with Government Code Section 14526, Streets and Highways Code Section 164 and the STIP Guidelines. The ITIP is a five-year program managed by Caltrans and funded with 25% of new STIP revenues in each cycle. Developed in cooperation with regional transportation planning agencies to ensure an integrated transportation program, the ITIP promotes the goal of improving interregional mobility and connectivity across California.

If requesting ITIP funding, provide narrative on your request in the text field below. Or state that no ITIP funding was requested.

No ITIP funding is being requested in the 2020 RTIP.

Section 9. Projects Planned Within Multi-Modal Corridors (per Sections 11 and 20e)

Improving operations, safety, and multi-modal mobility in the State Route (SR) 49 corridor between the cities of Grass Valley (Nevada County) and Auburn (Placer County) has been a focus of the Nevada County Transportation Commission (NCTC) and Caltrans since the mid 1990's. In 2009, Caltrans in coordination with the NCTC and the SR 49 Stakeholder Committee developed the SR 49 Corridor System Management Plan (CSMP). The development of the 2009 SR 49 CSMP was a unique "first generation CSMP." The two large major capital projects planned for the corridor, were redefined into eight smaller, more fundable projects based on a phasing plan developed by Caltrans and NCTC. The plan also focused on implanting smaller interim safety and operational improvements on the corridor. The State Route 49 Corridor System Management Plan was updated in 2018.

The State Route 49 Corridor System Management Plan (CSMP) 2018 Update focused on system management strategies and coordinated capital investments, so that all the pieces of the corridor function as an efficient transportation system and include performance evaluation measures to track the effectiveness of the strategies and projects. The goal of the CSMP is to improve mobility along the SR 49 Corridor by focusing on the integrated management of a subset of the entire transportation network within the corridor, including select highways and freeways, parallel and connector roadways, transit, and bicycle facilities. The objectives of the CSMP are to improve safety on the transportation system, reduce travel time or delay on all modes, improve connectivity between modes and facilities, improve travel time reliability, increase access to jobs, housing, and commerce, and expand mobility options along the corridor in a cost-effective manner.

The Nevada 49 Corridor Improvement Project (CIP) is the next phase of several planned long-term capital improvements that are focused on improving safety, operations, connectivity, and mobility within the corridor. This project will address the section of SR 49 that, due to funding

limitations, was not able to be addressed as part of the previously constructed (April 2014) SR 49/La Barr Meadows Road signalization, widening, and frontage road system project.

Completion of this project is the top regional priority of the NCTC and there is strong local support for improvements that will improve safety and operations on SR 49. There is also a strong local desire to have the highway improved to four lanes to facilitate and handle the traffic capacity associated with a mass-evacuation in the event of a major wildland fire.

C. Relationship of RTIP to RTP/SCS/APS and Benefits of RTIP

Section 10. Regional Level Performance Evaluation (per Section 19A of the guidelines)

Anticipated Project Outcomes

Upgrading the highway to a four-lane facility with a continuous median barrier, eliminating existing merge conflict points, consolidating multiple access points into an access controlled intersection via frontage road segments, the addition of 8-foot shoulders, and horizontal and vertical alignment improvements are anticipated to achieve the following outcomes:

- Improving the reliability of travel times by improving capacity, eliminating merge points and goods movement bottlenecks, reducing accidents, and providing for truck climbing lanes.
- Improve interactions between roadway users, reducing the likelihood of high consequence events.
- Improving safety by eliminating merge conflict points between freight trucks and passenger cars and reducing rear end accidents (achieve reduction in traffic fatalities and serious injuries related to collisions).
- Improving pedestrian and bicycle mobility and safety through the addition of shoulders.
- Improved traffic flow reducing vehicle congestion and associated air quality emissions.
- Support commerce and economic growth by improving traffic operations and travel times. The pro- posed project improvements will also ensure that SR 49 is able to handle the forecasted growth of goods movement on the corridor, and serve as an Emergency Detour Route when I-80 is closed, due to major accidents, wildland fires, construction, and serve as an evacuation route during wildland fires. When freight and passenger vehicles are re-routed, additional capacity is needed.
- Advances national and regional economic development by improving connections to the nation's transportation network to support the movement of freight and people.
- Reducing corridor traffic congestion improving multi-modal connections to peripheral regions and urban centers and job opportunities.

The proposed RTIP is consistent with the following goals and objectives of the Nevada County Regional Transportation Plan 2015-2035:

Goal 1.0 Provide for the safe and efficient movement of all people, goods, and services on the roadway network.

- Objective 1A: Improve safety

- Objective 1B: Coordinate with Caltrans and the SR 49 Stakeholders Committee to ensure development and implementation, and funding of projects within the SR 49 Corridor System Management Plan (CSMP) that improve safety and operations.

The State Route 49 Corridor System Management Plan 2018 Update identified the following baseline performance metrics. It is anticipated that the proposed RTIP will improve the travel reliability (BTI) to reliable (BTI<0.25) within the project limits of the SR 49 Widening Project and reduce accidents and fatalities per million vehicle miles traveled.

Travel time reliability is a transportation performance metric advocated at both the federal and state levels. How predictable travel time is can be critical for commuters, goods movement, and transit provision. As such, the federal National Performance Management Rule now specifically mandates State Departments of Transportation and Metropolitan Planning Organizations to measure travel time reliability on the National Highway System (NHS). Travel time reliability is defined as the variation in travel time for the same trip from day to day ("same trip" implies a trip made with the same purpose, from the same origin, to the same destination, at the same time of the day, using the same mode, and by the same route). If variability is large, the travel time is considered to be unreliable, because it is difficult to generate consistent and accurate estimates for it. If there is little or no variation in the travel time for the same trip, the travel time is considered to be reliable.

There are several measures available to determine travel time reliability. The SR 49 Corridor System Management Plan 2018 Update study utilized the Buffer Time and the Buffer Time Index (BTI) to report reliability. Buffer Time is the amount of extra time a person needs to account for above the average travel time to ensure being on time 95% of the time (approximately one day late per month). If a commute trip usually takes 30 minutes, but there are periodic issues with weather or traffic incidents that can cause the commute to take 45 minutes, the buffer time would be 15 minutes, causing the commuter to be 15 minutes early on an average day, and late only occasionally. Buffer time can be monetized similar to delay. A person's time has a value, and buffer time spent each day to account for unreliable roads has an opportunity cost that could otherwise be spent with family at home or elsewhere. The BTI value normalizes buffer time against the average travel time controlling for distance and typical daily congestion. The BTI is simply the ratio of Buffer Time against the average travel time and is expressed as an index.

The Highway Capacity Manual (HCM) 6th Edition definitions were used to define congestion and reliability. These thresholds reflect heavy congestion (with observed average speed less than 60 percent of the free-flow speed) and unreliable road segments (with a 95th percentile travel time more than 1.5 times longer than the 50th percentile travel time (i.e., average), quantified by Level of Travel Time Reliability or LOTTR). The scheme below was used to develop the thematic maps of the results. Table 3.1 shows the Buffer Time Index (BTI) range and metrics for reliable, moderately reliable, and unreliable.

Table 3.1 Reliability-Congestion Matrix

	Reliable	Moderately Reliable	Unreliable
BTI [A] Range	BTI<0.25	0.25>=BTI<0.50	BTI>=0.50
Uncongested [B]	Predictable and efficient	Not always predictable, but usually efficient	Unpredictable, but not often congested
Congested [B]	Predictable and inefficient	Not always predictable, but usually inefficient	Unpredictable, and often congested

A BTI: A measure of reliability, measures percentage of travel time devoted to being on time above average travel time.
B Free flow speeds were estimated for each segment based on NPMRDS data during the hours of midnight and 3:00 AM.

Performance Metrics SR 49 Corridor Improvement Project PM (CSMP Zone 6)

Zone 6 accounts for the remaining 3.1-mile portion of the CSMP study corridor. With the exception of the transition areas at La Barr Meadows and McKnight Way (where SR 49 has two lanes in each direction), SR 49 segment in this zone is a two-lane highway with approximately 14 access points. All of the access points (with the exception of La Barr Meadows Road at the southern terminus) are side-street stop controlled intersections. The majority of those access points do not have dedicated turn lanes on SR 49. Each of these uncontrolled intersections creates multiple conflict points on the corridor. With the growth in traffic on SR 49, this may potentially result in an increase in the number of collisions involving vehicles entering and exiting SR 49 without the benefit of dedicated turn lanes. Based on travel time runs, the average time to traverse the entire length of Zone 6 was determined to be 3 minutes and 36 seconds.

Travel Time Reliability

The travel time reliability (BTI) was broken down for passenger cars and heavy-duty trucks for Zone 6. This zone is from La Barr Meadows Road/Allison Ranch Road to South of McKnight interchange. Per the NPMRDS data segment limits, these limits for Zone 6 were apportioned based on length proportions of the respective segments.

Passenger Cars

As presented in Table 9.1, the passenger car BTI reliability for the southbound direction in PM peak hours showed unreliable conditions. However, the AM peak hour for the southbound direction showed reliable results. This is likely due to the increase in traffic volumes (PM peak hour are almost double the AM peak hour). The other BTI results for the northbound direction showed moderately reliable conditions in the AM peak hour and reliable conditions in the PM peak hour.

Table 9.1 Zone 6 Passenger Car BTI Reliability

	Reliability BTI (Passenger Vehicles)			
	NB		SB	
Segment	AM	PM	AM	PM
La Barr Meadows Road/Allison Ranch Road to S. of McKnight Interchange	0.26	0.18	0.16	0.69

Heavy-Duty Trucks

Table 9.2 presents the BTI reliability for heavy-duty trucks. This showed similar results in comparison to the passenger cars except the trucks had slightly less reliability. The southbound direction in the PM peak hour had a BTI of 0.79 (unreliable) and the AM peak hour had a BTI of 0.20 (reliable). The northbound directions showed moderately reliable conditions for AM and PM peak hours.

Table 9.2 Zone 6 Heavy Duty Trucks BTI Reliability

	Reliability BTI (Trucks)			
	NB		SB	
Segment	AM	PM	AM	PM
La Barr Meadows Road/Allison Ranch Road to S. of McKnight Interchange	0.31	0.28	0.20	0.79

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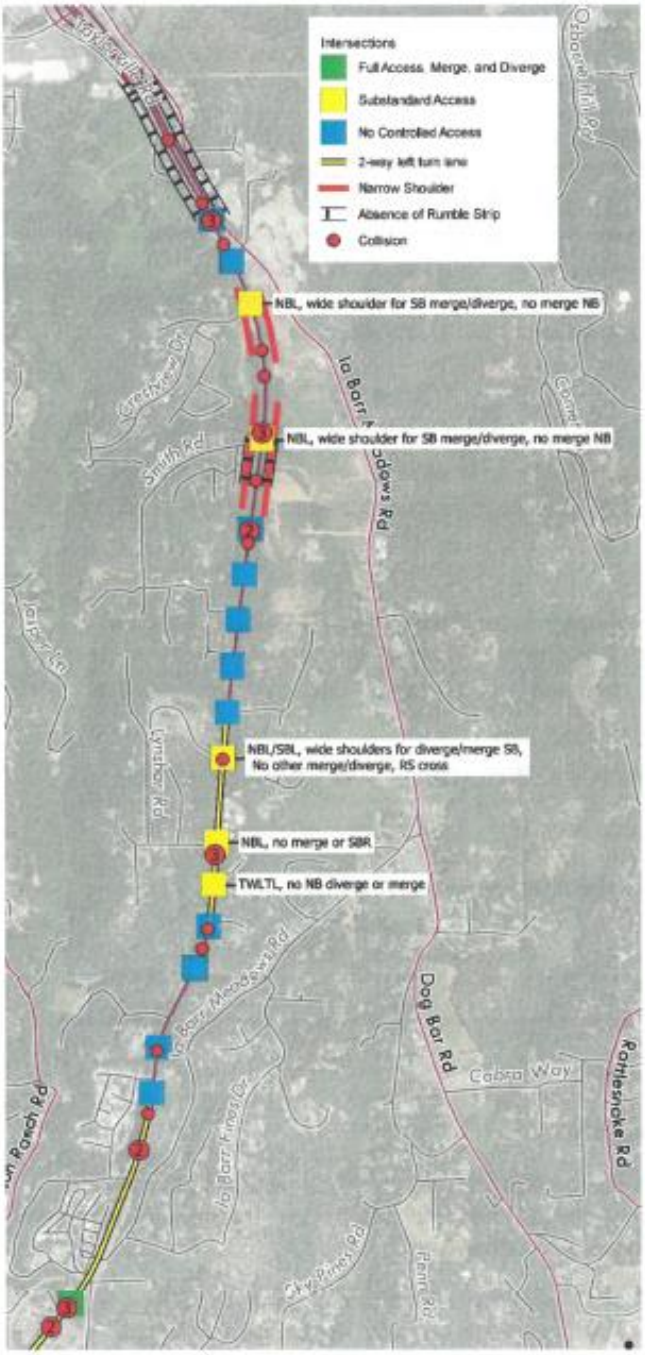
Table 9.3 presents the performance measures for Zone 6 for Existing and Future (Year 2035) Conditions **without** the proposed SR 49 Corridor Improvement Project presented included in the 2020 RTIP.

Table 9.3 Zone 6 Projected Performance Without Improvement

Existing Average Daily Traffic[1]			30,495
Future (Year 2035) Average Daily Traffic[2]			33,545
Existing LOS (Year 2018)	AM	NB	E
		SB	E
	PM	NB	E
		SB	E
Future LOS (Year 2035)	AM	NB	E
		SB	E
	PM	NB	E
		SB	E
Total Vehicle Hours of Delay	AM	NB	4.84
		SB	1.65
	PM	NB	4.19
		SB	8.92
Total Person Minutes of Delay[3]	AM	NB	333.57
		SB	113.72
	PM	NB	288.66
		SB	614.12
Minutes of Delay per Vehicle	AM	NB	0.23
		SB	0.13
	PM	NB	0.23
		SB	0.38

1
Source: Average Daily Traffic based on 2018 traffic counts
2 Source: Growth Rate used was obtained from the Nevada County Travel Demand Model
3 Source: Delay is the average additional travel time by vehicles traveling is the difference between the average FFS and average speed. A vehicle occupancy factor of 1.15 was used for passenger car and vehicle occupany factor of 1.0 for trucks.



9.2 Safety Analysis (81 Collisions)

In Zone 6, out of 81 total collisions recorded from 2012 to 2016, one was fatal and 34 resulted in injury. In the undivided four-lane section of Zone 6, the overall collision rate is 0.65 per MVM (lower than the statewide rate of 0.9 per MVM). In the two-lane section of Zone 6, the overall collision rate is 0.52 per MVM (lower than the statewide rate is 1.08 per MVM). In the undivided four-lane section of Zone 6, the fatal rate is 8.3%, higher than the statewide rate of 1.1%. There are four collision areas of primary concern:

SR 49 & Allison Ranch Road/La Barr Meadows Road

This is a signalized intersection with standard access. Four of the eight injury collisions at the intersection are rear-end collisions. One of the collisions is a severe injury sideswipe collision. Another collision is a fatal pedestrian collision.

SR 49 & Wellswood Way

This is a side-street stop controlled intersection with substandard access with three injury collisions.

SR 49 & Smith Road

This a side-street stop controlled intersection with substandard access. Of the four injury collisions, two are sideswipes, likely due to the left turn from Smith Road not having a merge lane. One of the sideswipe collisions is a severe injury collision.

Northern Segment of Zone 6

The northern segment of Zone 6 does not have any significant access points, but it has ten collisions. One of those collisions was a severe injury sideswipe collision 910 feet north of Crestview Drive.

Other Significant Collision

In addition to the fatal and severe injury collisions at the intersections discussed above, the following collision occurred:

A severe injury sideswipe collision on SR 49 occurred 900 feet south of Smith Road.

This project will improve safety, traffic operations, goods movement, transit, bicycle, and pedestrian mobility throughout the project limits. The project proposes to extend the existing SR 49 four-lane access-controlled freeway section with a concrete median barrier and 8-foot shoulders with rumble strips, EWNV striping, and pavement edge treatments. This improvement will reduce rear-end and sideswipe accidents that, for the existing two-lane configuration, are often due to either congestion or traffic slowing or stopping for vehicles preparing to make turning movements. Rumble strips will alert fatigued or distracted drivers who start to drift out of their

lane. Widening shoulders to standard widths will provide additional recovery area for drivers who stray outside the roadway. Pavement edge treatments allow vehicles that leave the roadway a gentler slope to navigate when re-entering the roadway. The median barrier will eliminate the potential for head-on accidents and will reduce broadside accidents in this segment of SR 49.

The project will also eliminate numerous access points adjacent to SR 49, which create low speed versus high speed conflicting movements, which have resulted in collisions, serious injuries and fatalities, and many other "near misses" that have occurred at these locations. Frontage road segments will be constructed to collect and funnel access to SR 49 at two at-grade intersections. Animal crossing tunnels with fencing at the right-of-way line should reduce the number of deer or other animal strikes. This project will remove the existing merge points at each end of the project limits, reducing rear-end and sideswipe accidents and improving the highway from two to four travel lanes, connecting to the newly constructed four-lane section to the south and the existing four-lane Golden Center Freeway in Grass Valley to the north.

This project will reduce congestion, improve operations, enhance multi-modal options, improve safety and achieve reductions in broadside, rear end, and head-on accidents. The segment of SR 49 that includes the proposed project serves as the gateway to the Grass Valley/Nevada City area, which serve as the economic hub of western Nevada County. The existing two- lane highway's current Level-of-Service (LOS) is E during peak hours, and cannot accommodate future traffic increases. The volumes of both local traffic and goods movement freight traffic have increased and the State highway facility have become an integral part of the local circulation system in addition to serving tourist, interregional, and interstate traffic. Growth forecasts for the corridor indicate that traffic congestion and delays will only increase if SR 49 in Nevada County is not improved. It is estimated that 30% of the County workforce is using this route as a primary commute route to major employment centers outside of the County, resulting in over-capacity traffic demand during peak commute periods. Historical and recreational tourism traffic also increases congestion in the project area throughout the year.

The planned improvements will accommodate existing and projected future traffic volumes at LOS D or better through the year 2030. It is anticipated this project will reduce 96 collisions over 20 years. Operations will be improved through the installation of Traffic Management Systems. Existing culverts in poor condition within the project limits will be rehabilitated and extended, pavement will be rehabilitated, and lighting will be upgraded to standard.

Goal 2.0 Create and maintain a comprehensive, multi-modal transportation system to serve the needs of the County.

- Objective 2A: Reduce dependence on the automobile by emphasizing transit, ridesharing, working from home, and pedestrian and bicycle travel.
- Objective 2B: Create bicycle, pedestrian, and transit networks that provide access and connections between key destinations including schools and commercial centers.

The project will also address the need for adequate continuous shoulders to accommodate pedestrians, bicyclists and disabled vehicles by widening the shoulder to 8 feet. The existing highway has paved and/or gravel shoulders that vary from 0 to 8-foot wide; but more typically, these shoulders are non-existent or are much narrower than 8-foot. The Nevada County Bicycle Master Plan identifies the need for shoulders on this segment of SR 49 to improve safety, eliminate existing gaps, and provide connectivity. This project will correct roadway deficiencies within the project limits by bringing this segment of SR 49 up to current design standards.

The SR 49 corridor also plays a key role in providing interregional multi-modal connectivity as an interregional public transit corridor, providing Gold Country Stage fixed-route transit connections between Nevada and Placer County and access to the Amtrak Capital Corridor Inner-City Passenger Rail station in Auburn. The planned improvements in these corridors will improve the quality of life by providing mobility options, increasing reliability and accessibility to all modes of transportation and enhance connections to local and regional economic centers.

Goal 3.0: Reduce adverse impacts on the natural, social, cultural, and historical environment and the quality of life.

- Objective 3B: Reduce regional emissions of criteria pollutants and greenhouse gases.

Emission Reduction Estimates

Emission Reduction	**Total Over 20 Years***	**Average Annual***	**Total Over 20 Years****	**Average Annual ****
CO Emissions Saved	113	6	$0.0	$0.0
CO2 Emissions Saved	25,696	1,285	$0.0	$0.0
NOX Emissions Saved	35	2	$0.1	$0.0
PM10 Emissions Saved	0	0	$0.1	$0.0
PM2.5 Emissions Saved	0	0		
SOX Emissions Saved	0	0	$0.0	$0.0
VOC Emissions Saved	8	0	$0.0	$0.0

Investment Analysis Summary
* *Tons*
*** Value in mi1lions of dollars*
**** Includes value for CO2e*

Performance measures included in the Regional Transportation Plan are monitored and progress towards goals are measured and updated every four years.

Section 11. Regional and Statewide Benefits of RTIP

Provide qualitative narrative on the Regional and Statewide benefits of RTIP in text field below.

The SR 49 corridor is an important route that serves local, regional, and interregional traffic. The route serves as a major connector for both automobile and truck traffic originating from the I-80 corridor in the Auburn area and the SR 49/20 corridor in the Grass Valley and Nevada City areas. SR 49 is evolving into a critical goods movement corridor as demonstrated by increasing truck volumes. The 2015 Caltrans District 3 Goods Movement Study projects that between 2012 and 2032, the vehicle-miles traveled by heavy duty trucks (5+ axle trucks) is forecast- ed to increase 69% in Nevada County. SR 49/20 corridor is included in the Caltrans 2018 Upstate California Regional Intelligent Transportation System (ITS) Master Plan and in the Caltrans 2015 Interregional Transportation Strategic Plan (ITSP). The ITSP identifies interregional highway improvements in the 11 Strategic Interregional Corridors, that should be the focus of investments and are considered to be of greatest interregional significance.

SR 49 is a significant interregional connector for goods movement and for travelers seeking tourist and recreational destinations. The corridor serves as a vital link to regional employment centers in Placer County, and provides the connection to I-80 and regional employment centers in Sacramento. Safety, mobility, and capacity are major issues on the SR 49 corridor. Existing highway operations data analysis, for this project segment of SR 49, shows LOS is forecasted to deteriorate from LOS E to LOS F, without completion of the project.

SR 49 is a significant interregional connector for natural resource-based product shipments, including lumber and mining, and for travelers seeking historical tourism and recreational destinations. The corridor also serves as a vital link to regional employment centers in Placer County, and more affordable rural housing opportunities in Nevada and Sierra counties. Safety, mobility, and capacity are major issues on the SR 49 corridor.

SR 49 acts as a lifeline route to several communities in Nevada, Placer, and Sierra counties, and is the major interregional state highway connecting to the I-80 gateway. The planned improvements in these corridors will improve the quality of life by providing mobility options, and increasing accessibility to all modes of transportation. The SR 49 corridor plays a key role in providing interregional multi-modal connectivity as an interregional public transit corridor, providing transit connections between Nevada and Placer Counties and access to the Amtrak Capitol Corridor Intercity Passenger Rail station in Auburn.

Completion of this project is the top regional priority of the NCTC and there is strong local support for improvements that will improve safety and operations on SR 49. There is also a strong local desire to have the highway improved to four lanes to facilitate and handle the traffic capacity associated with a mass-evacuation in the event of a major wildland fire.

Also critical to the national economy, both SR 20 and SR 49 are the only routes that can be utilized as Emergency Detour Routes when I-80, between Emigrant Gap and Colfax, are closed due to major accidents, wildland fires, avalanche, snow and ice, mudslides, and construction; and both routes are designated to be able to handle STAA oversize and CA Legal Trucks. When I-80 is

closed north of Colfax, CA, truck traffic and passenger vehicles are able to be detoured onto SR 20 to SR 49 and back onto I-80. When I-80 is closed south of Colfax, truck traffic and passenger vehicles are able to be detoured onto SR 174, connecting them to SR 20/ SR 49 and back onto I-80. Data collected by the Caltrans District 3 Traffic Management Center, indicate that between 2004 and 2014 there were 188 closures of I-80, where truck traffic and passenger vehicles were rerouted onto SR 20 and SR 49. The amount of commerce that travels over I-80 is immense. Estimates show an average of between 4 to 8 million dollars worth of commerce travels over the Donner Pass on I-80, every hour throughout the year. With both truck and passenger volumes forecasted to increase on I-80, SR 20, and SR 49, it is critical that improvements are constructed on SR 49 to ensure it has the capacity to safely handle future detour events. NCTC and Caltrans continue to partner in order to deliver improvements that reduce congestion, improve safety, reduce delays, and facilitate goods movement through these corridors.

D. Performance and Effectiveness of RTIP

Section 12. Evaluation of Cost Effectiveness of RTIP (Required per Section 19)

Per Section 19B and Appendix B of the STIP Guidelines, regions shall, if appropriate and to the extent necessary data and tools are available, use the performance measures in Table B2 or B2a below to evaluate cost-effectiveness of projects proposed in the STIP on a regional level.

This information is currently being prepared as part of the PA/ED that is scheduled to be completed in mid-2020.

Section 13. Project Specific Evaluation (Required per Section 19D)

Investment Analysis: Summary of Results

Itemized Benefits (mil. $)	Passenger Benefits	Freight Benefits	Total Over 20 Years	Average Annual
Travel Time Savings	$76.3	$6.7	$83.1	$4.2
Vehicle Op. Savings	-$0.6	$0.0	-$0.6	-$0.0
Accident Cost Savings	$2.0	$0.1	$2.1	$0.1
Emission Cost Savings	$0.1	$0.1	$0.2	$0.0
TOTAL BENEFITS	$77.8	$7.0	$84.8	$4.2
Time Saved (Person-Hrs)			13,021,235	651,062

Life-Cycle Costs (mil. $)	$105.2
Life-Cycle Benefits (mil. $)	$84.8
Net Present Value (mil. $)	-$20.4
Benefit/Cost Ratio:	0.8
Ratio of Return on Investment	4.9%
Payback Period:	14 Years

In 2015, Governor Jerry Brown signed Executive Order B-30-15, which established a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by the year 2030. The objective of the executive order was to ensure California is able to meet its long-term target of reducing GHG emissions to 80 percent below 1990 levels by the year 2050. The Nevada County Transportation Commission's RTIP is supports Executive Order B-30-15 by increasing multi-modal options and connectivity and reducing emissions related congestion.

The STIP Guidelines state that this evaluation should be included in the PPRs (Section 15 of the RTIP Template).

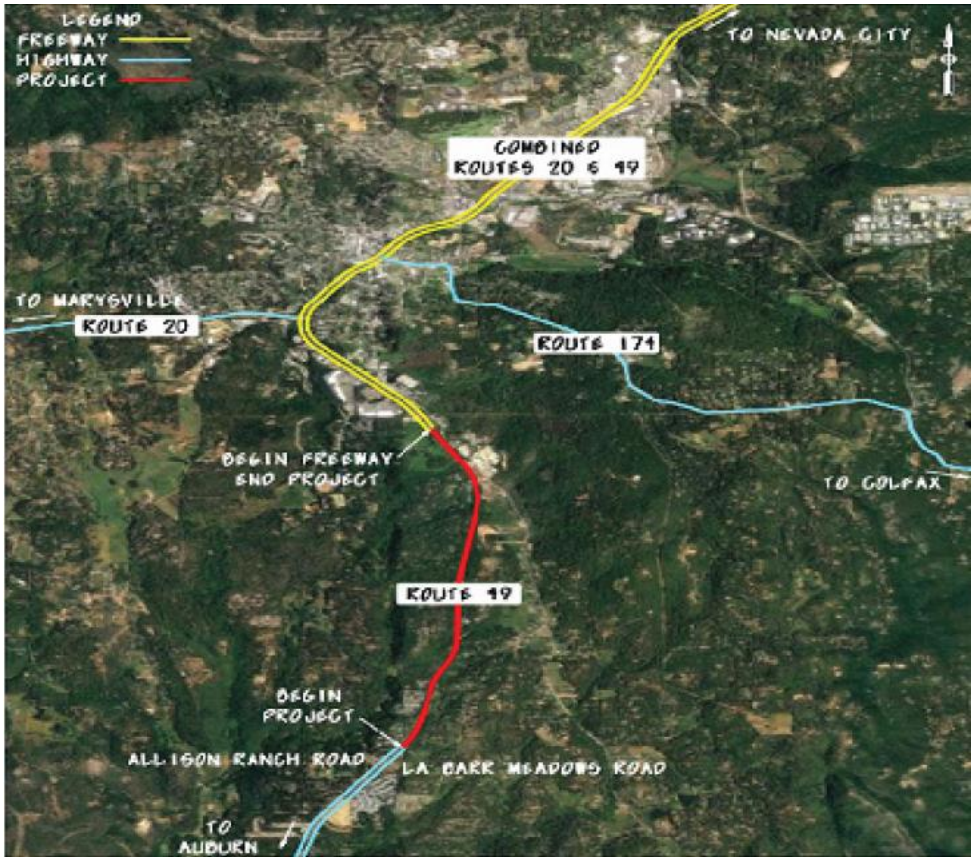
E. Detailed Project Information

Section 14. Overview of Projects Programmed with RIP Funding

Provide summary of projects programmed with RIP funding including maps in the text field below as required per Section 19 of the STIP Guidelines.

The only project submitted in the NCTC 2020 RTIP is the funding request to add additional funding the previously programmed PA/ED for the SR 49 Widening Project (Nevada 49 Corridor Improvement Project). This project proposes to upgrade the highway to a four-lane facility with a continuous median barrier, eliminating existing merge conflict points, consolidating multiple access points into an access controlled intersection via frontage road segments, the addition of 8-foot shoulders, truck climbing lane, and horizontal and vertical alignment improvements.

Project Location Nevada County



SR 49 Widening (Nevada 49 Corridor Improvement Project) PM 11.1 to PM 13.3

F. Appendices

Section 15. Projects Programming Request Forms (Provide Cover Sheet) – Regional Agencies will add their PPRs in this section for each project included in the RTIP, whether it is a project reprogrammed from the 2018 STIP, or a new project.

Section 16. Board Resolution or Documentation of 2020 RTIP Approval (Provide Cover Sheet) – Agencies will add their resolution or meeting minutes.

Section 17. Documentation on Coordination with Caltrans District (Optional) (With Cover Sheet)

Section 18. Detailed Project Programming Summary Table (Optional)

Section 19. Alternative Delivery Methods (Optional)

Section 20. Additional Appendices (Optional)